## REMARKS

The above amendments to the above-captioned application along with the following remarks are being submitted as a full and complete response to the Office Action dated September 29, 2006. In view of the above amendments and the following remarks, the Examiner is respectfully requested to give due reconsideration to this application, to indicate the allowability of the claims, and to pass this case to issue.

Status of the Claims

As outlined above, claims 1, 3-5 and 8-16 stand for consideration in this application, wherein claims 2 and 6-7 are being canceled without prejudice or disclaimer, while claims 1, 3-5, 8-9 and 13-15 are being amended to correct formal errors and to more particularly point out and distinctly claim the subject invention.

All amendments to the application are fully supported therein. Applicants hereby submit that no new matter is being introduced into the application through the submission of this response.

Prior Art Rejections

35 U.S.C. §103(a) rejections

Claims 1 and 15 were rejected under 35 U.S.C. §103(a) as being allegedly unpatentable over Sakuraba (U.S. Pat. 5,850,224). Claims 2-5, 9-13 and 16 were rejected under 35 U.S.C. §103(a) as being allegedly unpatentable over Sakuraba in view of Kurihara (U.S. Pat. 6,005,572). Claims 6-8 were rejected under 35 U.S.C. §103(a) as being allegedly unpatentable over Sakuraba, Kurihara and Recker et al (U.S. Pat. 5,657,478). Claim 14 was rejected under 35 U.S.C. §103(a) as being allegedly unpatentable over Tsunoda (U.S. Pat. 4,757,455) in view of Sakuraba. These rejections are respectfully traversed for the reasons set forth below.

According to the Manual of Patent Examining Procedure (M.P.E.P. §2143),

> To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both not be found in the prior art, not in the applicant's disclosure.

Claim 1

Claim 1 as amended recites that a display control device comprises: an image data generating unit for generating image data for a plurality of display faces according to a series of command, each of the plurality of display faces having a plurality of image data; an image data storage unit for storing generated image data respectively in storage areas of a memory unit, the storage areas corresponding to the display faces; and a display processing unit for reading image data of a plurality of display faces stored in the memory unit to superimpose the image data, converting the image data into display output signals, and setting a display switching information, wherein the display switching information indicates whether or not the storage area from which the image data is read is switched, wherein the display processing unit is operable to switch the storage areas from which the image data is read according to the display switching information, in response to the display control device receiving a display vertical synchronous signal of a display device.

Fig. 1 illustrates an exemplary block diagram showing the display control device recited in claim 1. A drawing unit 20 and a display unit 22 are depicted as the image data generating unit and the display processing unit recited in claim 1, respectively. The display processing unit can switch the storage area of image data to display an image on the display device according to the display vertical synchronous signal. Because switching between image data storage areas for displaying a plurality of display planes can be performed synchronously with the vertical synchronous signal of the display device, switching of the storage area of the image data can be controlled without increasing a load of a CPU.

Sakuraba shows that three-dimensional graphics drawing apparatus includes frame buffers (800, 802 and 804 in Fig. 47), and Z buffers (806, 808, 810 in Fig. 47), a color display (430 in Figs. 49 and 50). However, Sakuraba merely shows that the data drawn in a three dimensional frame memory of a three dimensional drawing mechanism 22 is automatically transferred to a two dimensional drawing mechanism 26 through a depth data control mechanism 24 and displayed as a two dimensional image data by a color display 28 (col. 13, line 14-19). Also, Sakuraba merely shows that a plurality of the three dimensional drawing mechanisms 22 including a plurality of frame buffers are coupled to the two dimensional drawing mechanisms 26 (col. 25, line 32-67, Fig. 47). However, Sakuraba does not show or suggest, either explicitly or implicitly, that the frame buffer is switched according to vertical synchronous signal of the color display.

Furthermore, because, as recited in claim 1, the display processing unit is operable to switch the storage areas from which the image data is read according to the display switching information, the storage area in the display control device recited in claim 1 is switched to selectively read out the data to display an image. In contrast, Sakuraba merely shows that a plurality of frame memories 422, 424 and 426 are coupled to the three dimensional drawing mechanism 420 and a display control section 428, and data from the frame buffer is displayed to the color display read out by the display control section 428 (Fig. 49, col. 27, lines 18-36). Sakuraba does not show or suggest explicitly or implicitly that the frame buffer is switched by the display control section 428 to selectively read out data to display the color display 430.

In sum, there is no suggestion or motivation in Sakuraba to modify its features explicitly or implicitly, or in the knowledge generally available to one of ordinary skill in the art at the time the invention was made to embody all the features of the invention as recited in claim 1. Accordingly, claim 1 is not obvious over Sakuraba.

The secondary reference of Kurihara shows that a display unit has a first frame buffer 22 (the plane A), a second frame buffer 23 (the plane B), a mask plane 41 (a memory) and a screen unit 24 (CRT) (col. 4, lines 10-15, Fig. 2A). The mask plane 41 corresponds to 1-bit data representing whether each pixel on the screen should have image data stored in the first frame buffer or the second frame buffer (col. 4, lines 22-29). However, Kurihara merely shows that the data of the pixel identified by the coordinate (Xs, Ys) is read out from the mask plane, is set in the data register, is returned to the mask plane, and is then written at a position identified by the coordinate (Xd, Yd) in the mask plane (col. 11, lines 56-64, Step 66 at Fig. 9). However, Kurihara does not show or suggest, either explicitly or implicitly, switching a frame buffer to readout the image data in order to display an image on the screen. Clearly, Kurihara cannot show or suggest, either explicitly or implicitly, switching a frame buffer according to a vertical synchronous signal of the screen unit.

Therefore, the secondary reference of Kurihara fails to provide any disclosure, teaching or suggestion that makes up for the deficiencies in the primary reference of Sakuraba, as set forth above. Accordingly, claim 1 is not obvious over Sakuraba in view of Kurihara.

The secondary reference of Recker shows a system that includes a host, a co-processor and a display. In Recker, the host sends a command for performing a display switch to a FIFO command buffer, and the co-processor receives the command for performing a display switch from the FIFO command buffer and executes the command for

performing a display switch (col. 4, line 61- col. 5, line 6). The display is switched by switching a second frame buffer to a first frame buffer according to execution of the display switch command (step 385 in Fig. 3) and accessing the first frame buffer to display an image. In other words, Recker's system switches frame buffers to be accessed only according to the execution of the command for switching a display by the co-processor. Recker does not show or suggest either explicitly or implicitly that a display can switch a frame buffer according to a vertical synchronous signal of the display.

Therefore, the secondary reference of Recker fails to provide any disclosure, teaching or suggestion that makes up for the deficiencies in Sakuraba and Kurihara, as set forth above. Accordingly, claim 1 is not obvious over Sakuraba, Kurihara and Recker.

The primary reference of Tsunoda is directed to a navigating system which displays the present position of a vehicle on a travel course from a start position to a destination. Tsunoda shows storing map data, detecting geomagnetic North, deducing the current position of the vehicle on the basis of the detection of geomagnetic North, manually selecting a starting point and a destination, selecting a travel course of the vehicle between the starting point and a destination, displaying the travel course of the vehicle on a display with the current position of the vehicle and changing the travel course display image on the display unit from a diagrammatic roadmap to a road-name display while the vehicle is traveling on a freeway. However, Tsunoda doe not show or suggest either explicitly or implicitly switching the storage areas from which the image data is read in response to the display control device receiving a display vertical synchronous signal.

Regarding the second reference of Sakuraba, the arguments set forth above with respect to the elements recited in claim 1, namely, the storage area of image data of the display faces being operable to switch according to switch information from the image data processing unit in response to the display control device receiving a display vertical synchronous signal, are equally applicable here. The secondary reference of Sakuraba fails to provide any disclosure, teaching or suggestion that make up for the deficiencies in Tsunoda. Accordingly, claim 1 is not obvious over Tsunoda in view of Sakuraba.

Claims 9, 14, 15

Claims 9, 14, and 15 have the substantially same features as those of claim 1, at least with respect to the storage area of image data of the display faces being operable to switch according to switch information from the image data processing unit in response to the

display control device receiving a display vertical synchronous signal. As such, the arguments set forth above are equally applicable here. Claim 1 being allowable, claims 9, 14, and 15 must also be allowable.

Claims 3-5, 8, 10-13, 16

As to dependent claims 3-5, 8, 10-13 and 16, the arguments set forth above with respect to independent claims 1, 9, 15 are equally applicable here. The corresponding base claim being allowable, claims 3-5, 8, 10-13 and 16 must also be allowable.

Conclusion

In view of all the above, Applicants respectfully submit that certain clear and distinct differences as discussed exist between the present invention as now claimed and the prior art references upon which the rejections in the Office Action rely. These differences are more than sufficient that the present invention as now claimed would not have been anticipated nor rendered obvious given the prior art. Rather, the present invention as a whole is distinguishable, and thereby allowable over the prior art.

Favorable reconsideration of this application as amended is respectfully solicited. Should there be any outstanding issues requiring discussion that would further the prosecution and allowance of the above-captioned application, the Examiner is invited to contact the Applicants' undersigned representative at the address and phone number indicated below.

Respectfully submitted,

Stanley P. Fisher
Registration Number 24,344

Juan Carlos A. Marquez
Registration Number 34,072

**REED SMITH LLP**
3110 Fairview Park Drive
Suite 1400
Falls Church, Virginia 22042
(703) 641-4200

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